



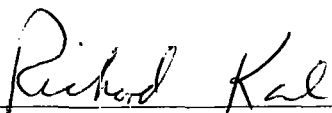
FIVE YEAR REVIEW REPORT

MASON COUNTY LANDFILL SUPERFUND SITE

**LUDINGTON,
MICHIGAN**

Pursuant to CERCLA

**Prepared by:
United States Environmental Protection Agency
Region 5
Chicago, Illinois**



Richard C. Karl, Director
Superfund Division, Region 5

2-13-06
Date

**FIVE YEAR REVIEW REPORT
EXECUTIVE SUMMARY
FEBRUARY, 2006**

MASON COUNTY LANDFILL SUPERFUND SITE

**LUDINGTON,
MICHIGAN**

The completion of the current five year review confirms that the Mason County Landfill Site remedial action remains protective of human health and the environment. The components of the remedy selected in the 1988 Mason County Landfill Site Interim ROD and 1993 Final ROD have been implemented under the 1989 Unilateral Administrative Order and 1994 Consent Decree. The soil/clay landfill cap prevents surface water infiltration and subsequent contaminant migration off-site. Restrictions for Site access, use of the landfill, and use of Site groundwater remain in place. Closure and post closure maintenance and monitoring of the Site landfill is currently providing adequate protection of human health and the environment. Recent Site groundwater monitoring outlined in the annual sampling report dated October 2004 has shown that drinking water standards for VOCs and SVOCs are being met. The primary concern for future monitoring is to ensure Michigan drinking water criteria at all groundwater wells are met for inorganic compounds and to ensure future residential development does not lead to elevated risks from Site groundwater. MDEQ and Mason County are continuing to discuss the monitoring program and are working toward resolving these issues through modification of the Site monitoring program.

This is the third five year review for the Mason County Landfill Site. The first five year review was completed and signed in November 1997, and the second five year review was completed in February 2001. Since Site deletion from the National Priorities List (NPL) in 1999 and the last five year review in 2001, MDEQ has held discussions with Mason County regarding revising the annual Site monitoring program. An agreement between MDEQ and Mason County was reached in August 2005 regarding some revisions, but MDEQ is requesting additional discussions and revisions based on concerns about residential areas near the Site property.

Five year reviews as required by USEPA will continue at the Mason County Site, but because the Site has been deleted from the NPL, MDEQ and Mason County will need to determine future agreements regarding operation and maintenance monitoring for the Site.

Five Year Review Summary Form

SITE IDENTIFICATION

Site name (from WasteLAN): Mason County Landfill

EPA ID (from WasteLAN): MID980794465

Region: 5

State: MI

City/County: Ludington, Mason

SITE STATUS

NPL status: ☒ Final ☐ Deleted ☐ Other (specify) _____

Remediation status (choose all that apply): ☐ Under Construction ☐ Operating ☒ Complete

Multiple OUs?* ☐ YES ☒ NO

Construction completion date: 6/30/92

Has site been put into reuse? ☐ YES ☒ NO

REVIEW STATUS

Lead agency: ☒ EPA ☐ State ☐ Tribe ☐ Other Federal Agency _____

Author name: Jeff Gore

Author title: Remedial Project Manager

Author affiliation: U.S. EPA, Region 5

Review period:** 10/5/05 to February, 2006

Date(s) of site inspection: November 10, 2005

Type of review:

☒ Post-SARA ☐ Pre-SARA ☐ NPL-Removal only
☐ Non-NPL Remedial Action Site ☐ NPL State/Tribe-lead
☐ Regional Discretion

Review number: ☐ 1 (first) ☐ 2 (second) ☒ 3 (third) ☐ Other (specify) _____

Triggering action:

☐ Actual RA Onsite Construction at OU #____ ☐ Actual RA Start at OU# 1
☐ Construction Completion ☒ Previous Five-Year Review Report
☐ Other (specify) _____

Triggering action date (from WasteLAN): 2/27/2001

Due date (five years after triggering action date): 2/27/2006

* ["OU" refers to operable unit.]

** [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

**U.S. Environmental Protection Agency
Region 5
Five Year Review
Mason County Landfill Superfund Site
Ludington, Michigan
February 2006**

I. Introduction

The United States Environmental Protection Agency (U.S. EPA) Region 5 has conducted a five year review of the remedial actions implemented at the Mason County Landfill Superfund Site in Ludington, Michigan. The review was conducted between October 2005 and February 2006. This report documents the results of the five year review. The purpose of five year reviews is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of the review are documented in the five year review reports. In addition, five year review reports identify issues found during the review, if any, and make recommendations to address them.

This review is required by statute. U.S. EPA performs statutory reviews on remedies selected that result in hazardous substances, pollutants or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure.

The NCP part 300.430(f)(4)(ii) of the Code of Federal Regulations (CFR) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

This is the third five year review for the Mason County Landfill Superfund Site. The second five year review was completed on February 27, 2001. The date for the current five year review is triggered by the completion of the February 2001 review. All three reviews are based on the initiation of the remedial action response date for the Site which was June 1990.

II. Site Chronology

Table 1 lists the chronology of events for the Mason County Landfill Superfund Site.

Table 1: Chronology of Site Events

Date	Event
1982	Initial discovery of problem
1982	Proposed for NPL listing
1983	NPL final listing
1986	Remedial Investigation/FS initiated
1988	Remedial Investigation/FS completed
1988	Interim ROD signed
1989	UAO issued
1990	Remedial Action start
1992	Remedy construction completion
1993	Final ROD signed
1994	RD/RA Consent Decree
1997	First Five year Review
1999	Site deletion from the NPL
2001	Second Five Year Review
2006	Third Five Year Review

III. Background

A. Physical Characteristics

The Mason County Landfill Site is an inactive landfill located three miles south of the City of Ludington, Michigan in Pere Marquette Township, just northeast of the intersection of Inman and Bradshaw Roads. Ludington, Michigan has a population of about 10,000. The population of Mason County was estimated at 28,000 on the 2000 census. The population within a three mile radius of the Site has been estimated at 5,200. The landfill, which occupies ten acres of the eighteen acre Site, operated as a municipal landfill from 1971 to 1978 and reportedly accepted residential, commercial and industrial waste. (See figures 1 and 2)

B. Land and Resource Use

Just north of the Mason County Landfill are heavily wooded areas, while orchards are located to the east and south of the Site. The topography varies from relatively level upland areas south and east of the landfill to steep valleys north of the landfill. Lake Michigan is the main drinking water source in the area and provides the Ludington water supply. In rural Pere Marquette Township, residents generally depend on small domestic wells screened in sand and gravel aquifers for potable water supplies. It was estimated that fourteen residential wells are within about a half mile radius of the landfill, which vary in depth from 30 to 150 feet below ground surface.

C. History of Contamination

The Mason County Landfill has been closed since August 1978, when it reached capacity. It is currently owned by Mason County, as a result of settlement of a suit filed by two property owners in 1981. The landfill is generally an area filled to a maximum depth estimated between 40 and 50 feet. It is estimated that approximately 140,000 cubic yards of fill is buried in the landfill. The companies that brought the largest amount of hazardous waste to the landfill are Strait Steel and Wire, Citation Walther, and Atkinson Manufacturing.

D. Initial Response

A U.S. EPA Field Investigation Team (FIT) inspected the Mason County Landfill Site in May 1982. Initial concerns included the need to repair and upgrade the existing landfill cover to prevent exposure to the contents of the landfill, and to reduce any risk to surface water and groundwater.

E. Basis for Taking Action

The Mason County Landfill Site was proposed for inclusion onto the National Priorities List (NPL) on December 30, 1982, based on the 1982 U.S. EPA FIT Team inspection. The Site became a final NPL listing on September 8, 1983. U.S. EPA conducted a two phase Remedial Investigation (RI) through a contractor at the Landfill beginning in 1986. Phase I was conducted from September to November of 1986, and Phase II was conducted between October 1987 and January 1988. The RI included extensive groundwater & surface water sampling, soil sampling, and landfill gas vent & air sampling.

Volatile organic compounds (VOCs), such as benzene and trichloroethene and semi-volatile organic compounds (SVOCs) such as bis(2-ethylhexyl)phthalate were historically detected in five down gradient groundwater monitoring wells within 400 feet of the landfill. Four chlorinated volatile hydrocarbons (1,1-dichloroethene; chloroethane; 1,1-dichloroethane; and tetrachloroethane) were detected in at least one phase of the Remedial Investigation, at concentrations ranging from 1 to 59 parts per billion (ppb). The highest concentration was 59

ppb of 1,1-dichloroethene. In addition, concentrations of iron, manganese, and sodium were at least one order-of-magnitude above up gradient levels for the wells located within 400 feet of the landfill.

A Feasibility Study (FS) to evaluate remedial alternatives based on the findings of two phases of the RI was completed with a report in July 1988. Based on the FS, an interim Record of Decision (ROD) was issued to address a remedial action for properly capping the landfill at the Mason County Site. A second ROD that addressed potential off-site groundwater contamination was completed after additional monitoring was done. The interim ROD was signed September 28, 1988. The final ROD was signed September 27, 1993.

IV. Remedial Actions

A. Remedy Selection

The response actions outlined for the Mason County Landfill Site in the September 1988 interim ROD included the following components:

- A RCRA subtitle C compliant soil/clay cap.
- A perimeter fence to restrict access.
- Deed restrictions on and near the Site to prohibit shallow aquifer use.
- Continued monitoring of groundwater and the soil/clay cap.

A Declaration of Restrictive Covenant to prohibit use of the land and shallow aquifer use within the fenced Site property area was recorded at the Mason County Register of Deeds in April 1992. A final ROD was issued for the Site in September 1993 after the remedy had been constructed, and U.S. EPA determined that no further remedial action was necessary except for continued groundwater monitoring and landfill maintenance. The State of Michigan submitted a letter to U.S. EPA in September 1993 with concerns that the remedy selection should be delayed until a conclusive demonstration is made that the new landfill cap results in a consistent reduction of groundwater contaminant concentrations.

B. Remedy Implementation

Negotiations for the remedial design/remedial action (RD/RA) with the PRPs were conducted but no settlement was reached. On April 10, 1989 a Unilateral Administrative Order pursuant to 106 of CERCLA was issued to Mason County to perform the RD/RA for the soil/clay cap.

Construction of the cap began on November 13, 1990 and was completed September 23, 1991 by

Mason County. The cap covers eighteen acres. Institutional controls along with deed restrictions were enacted in late 1991 at the Site by Mason County. Groundwater monitoring for the Site began in October 1989; semi-annual groundwater sampling was performed by EPA until September 1995, when annual sampling began by Mason County. A Declaration of Restrictive Covenant to prohibit use of the land and shallow aquifer use within the fenced Site property area was recorded at the Mason County Register of Deeds in April 1992. Mason County submitted a construction completion report in the summer of 1992 and the Unilateral Administrative Order was closed out September 1992.

A Consent Decree based on the 1993 Final ROD was entered in U.S. District Court in October 1994, which requires Mason County to maintain the landfill cap and conduct monitoring. The groundwater monitoring program is required for 30 years. The State of Michigan was not a party to the Consent Decree.

C. Systems Operations/ Operations and Maintenance

Groundwater and surface water remedial objectives at the Mason County Landfill Superfund Site are the attainment of U.S. EPA primary and secondary drinking water maximum contaminant levels (MCLs), and the elimination of any excess lifetime cancer risks according to Michigan Residential Drinking Water Criteria. Soil remedial objectives include the elimination of any excess direct contact, ingestion, inhalation and groundwater leachate human health risks by containment of contaminated soils.

The long term monitoring program at the Site will provide information on whether contaminant concentrations in groundwater and surface water continue to be within acceptable human health and environmental standards. The construction of the soil/clay cap minimizes the amount of infiltration through the landfill contents, which decreases the risk of contamination migrating into the shallow aquifer. Long-term maintenance of the cap is required to ensure that the remedy remains effective. Transport of potential landfill contamination into the aquifer as well as any residual contamination existing prior to the completion of the cap should be minimized, by the Site remedy and ongoing operation & maintenance program.

The responsible party contractor submitted a proposal in 1999 to eliminate certain monitoring well, surface water and sediment sample locations at the Mason County Site. U.S. EPA and the Michigan Department of Environmental Quality (MDEQ) approved elimination of a portion of the requested locations from future monitoring events in April 1999 because the previous three years of samples met residential drinking water criteria. In July 1999, the agencies approved the use of a Michigan certified laboratory for sampling analysis in place of the previous U.S. EPA Contract Laboratory Program (CLP) location in North Canton, Ohio. Minor cap repairs were also conducted in a one acre area in the east corner of the landfill in the fall of 1999.

A Notice of Intent to Delete the Mason County Landfill Superfund Site from the National Priorities List was issued on July 26, 1999. The effective date of the completion of the NPL deletion, published in the Federal Register, was September 9, 1999. It should be noted, however,

that the U.S. EPA Consent Decree requiring Mason County to perform landfill maintenance and Site monitoring remains in place.

The operation and maintenance contractor utilized in the annual sampling and reporting program at Mason County landfill was changed in 2003. Westshore Consulting has been providing the annual monitoring reports for the Site since that time.

V. Progress Since Last Five Year Review

This is the third five year review for the Mason County Landfill Superfund Site. The second five year review report was completed and signed in February 2001. Recommendations during the 2001 review included the following:

1) Continued maintenance and monitoring of the landfill cap to prevent deterioration that would allow infiltration through the cover; institutional controls should remain in place for the protection of the cap, and the prevention of shallow aquifer use at or near the landfill; and annual groundwater and surface water sampling should continue to monitor the potential of contaminant concentrations becoming elevated.

These items continue to be implemented at the Site, and are recommended until completion of the remedial action operation and maintenance requirements under the Consent Decree.

2) The one or two monitoring wells which could not be read at the November 2000 Site inspection should be numbered, so they can easily be located and distinguished in the future. The dissolved zinc levels in MW-8 and dissolved aluminum concentrations in up gradient deep well MW-19 should be noted during future annual sampling events, to see if the results continue to exceed Michigan drinking water criteria. If Michigan criteria continue to be exceeded, a discussion should be held with Mason County and the MDEQ Environmental Response Division to determine any potential impact to residential wells in the sampling program.

Although some monitoring wells were given permanent markers, others have become difficult to read since the last five year review. In addition, certain Michigan inorganic groundwater criteria continue to be exceeded. A meeting was held in August 2005 between MDEQ and Mason County to discuss the sampling program at the Mason County Landfill. Mason County's representative Westshore Consulting also attended the meeting.

VI. Five Year Review Process

A. Administrative Components

The Mason County Landfill Site five year review was prepared by Jeff Gore, U.S. EPA Remedial

Project Manager for the Site. John Spielberg , State Project Manager with the Michigan Department of Environmental Quality (MDEQ), also assisted with the review. The five year review consisted of a Site inspection and review of relevant documents.

B. Community Involvement

The completed report will be available in the Site information repository and the U.S. EPA website for public view. An advertisement notice regarding the five year review process was placed in the Ludington Daily newspaper on January 28, 2006 for public viewing.

Community relations ongoing at the Mason County Landfill Site include the comprehensive sampling program currently being carried out to assure that human health and the environment are protected, and contaminants are contained on the Site. No community interviews were required because of the ongoing relationship with the Mason County representatives on the Site. The sampling program is being done by a contractor hired by representatives of Mason County, Michigan.

C. Document Review

Documents reviewed in preparation of this five year review report include the following:

- 1) Five Year Review Report, Mason County Landfill Site, February 2001
- 2) Five Year Review Report, Mason County Landfill Site, November 1997
- 3) RD/RA Consent Decree, Mason County Landfill Site, October 1994
- 4) Final Record of Decision, Mason County Landfill Site, September 1993
- 5) Unilateral Administrative Order, Mason County Landfill, June 1989
- 6) Interim Record of Decision, Mason County Landfill Site, September 1988
- 7) Mason County Landfill Site file, and operation & maintenance documents.

The following standards were identified as applicable or relevant and appropriate requirements (ARARs) in the Interim ROD (refer to pages 30-33), Final ROD or previous five year reviews for the Site, and were reviewed for changes that could affect protectiveness:

- Safe Drinking Water Act Maximum Contaminant Levels (MCLs);
- Resource Conservation and Recovery Act (RCRA) hazardous and solid waste disposing and storage regulations;

- Clean Water Act (CWA)

- State of Michigan requirements for soil, groundwater, surface water and air compliance as listed in pages 30-33 of the Interim ROD;

D. Data Review

The Mason County Landfill Consent Decree operation and maintenance sampling program has been completed and reported annually at the Site through 2004. Groundwater monitoring wells, residential monitoring wells, surface water and sediments are sampled and analyzed during the annual sampling program. Recent Mason County Site monitoring has shown that drinking water standards for volatile organic compounds (VOCs) and semi-volatiles (SVOCs) are being met, in groundwater and surface water sample results. The most recent annual sampling report, dated October 2004, reported that all VOC and SVOC criteria are being met in the monitoring wells being sampled. A certain number of samples continue to exceed Michigan drinking water criteria for inorganics, such as manganese and iron. The October 2004 Sampling Report listed manganese results exceeding criteria in three monitoring wells, and iron exceeding criteria in three monitoring wells. Up gradient deep well MW-19 exceeded criteria for aluminum. With the exception of one lead detection in RW-11, all residential wells sampled were within Michigan drinking water criteria. Lead levels in RW-11 have been 4.3 ppb in 2004, 4 ppb in 2003 and 2.8 ppb in 2002.

The remedy selected in the ROD has been implemented and remains functional, operational and effective. As long as the Mason County Landfill representatives and contractor continue to maintain and monitor the Site hazardous waste cap and groundwater system, the remedy should contain the soil contamination and ensure that no surface water contamination or groundwater plume develop. The RCRA Subtitle C compliant hazardous waste cap and Site security fence ensure that source area contamination is contained, and a permanent barrier exists to prevent human contact. Although no off-site groundwater plume exists, MDEQ is concerned that certain groundwater monitoring wells near existing residential groundwater wells exceed Michigan standards for inorganics such as manganese and iron. These Michigan inorganic compounds were not enforceable standards under the U.S. EPA RODs and CD for the Mason County Landfill Site.

E. Site Inspection

The Mason County Landfill Site has been visited periodically by the current remedial project manager since the last five year review. The most recent visit was performed on November 10, 2005, in order to inspect the Site for this five year review. Jeff Gore of U.S. EPA, John Spielberg & Matt Baltusis of MDEQ, and Dave Hasenbank & Dan Rohde of Mason County were present during the November inspection. The five year review site inspection checklist was used as a guideline for the Mason County Landfill Site inspection.

A walk was taken around the surface of the landfill, as well as portions of the large property area surrounding the landfill. Vehicles were driven down Inman Road to inspect certain monitoring, surface water and residential areas.

The Site was found to be in good condition during the inspection, recently mowed and free of debris. There were no signs of excessive erosion along the landfill cap, although minor signs of animal burrows were seen. The Site showed no signs of any vandalism or other disturbances. The access fence was properly in place with the gate locked. A number of monitoring wells did not have a permanent stamp marker, and a few wells were not properly locked.

The issues found during the five-year review inspection included:

- 1) A residential well is being sampled and is not included on the Annual monitoring Report figures.
- 2) The area on the landfill surface excavated by the animal burrow should be filled.
- 3) The following wells did not have permanent stamp markers: MW21, MW26, MW11, the unmarked well by MW 20, and a number of unused monitoring wells.
- 4) The following wells did not have locks on them: MW21, MW26, and stab wells 4, 5, 6, & 10.
- 5) RW6 was marked incorrectly as RW1.
- 6) A new residential development is planned to be located northeast of the Site. MDEQ and Mason County are evaluating the water quality there with a recently installed test well and potentially with an additional hydrogeological study.

VII. Assessment

The following questions address the protection of human health and the environment of the remedy at the Mason County Landfill Superfund Site.

Question A: Is the remedy functioning as intended by the decision documents? Yes.

- **Implementation of Institutional Controls and Other Measures:** The 1988 ROD included institutional controls implementing a Declaration of Restrictive Covenant to prevent development of the Site within the fenced area, and to assure the integrity of the landfill and other components of the remedial action. Site access and use is restricted with a security perimeter fence, as is the installation of groundwater drinking wells on the Site property. These controls and restrictions are best efforts, and are to remain in place to prevent property access and property groundwater use in relation to the remedial action.

- **Remedial Action Performance:** The remedy selected in the Interim and Final RODs has been implemented and remains functional, operational and effective. With continued maintenance and monitoring of the Site hazardous waste cap and groundwater system, the remedy should contain the soil contamination and ensure that no surface water contamination or groundwater plume develop. The RCRA Subtitle C compliant hazardous waste cap and Site security fence insure that source area contamination is contained, and a permanent barrier exists to prevent human contact. Although no off-site groundwater plume exists, MDEQ is concerned that certain groundwater monitoring wells near residential wells exceed Michigan standards for inorganics such as manganese and iron.
- **System Operations/O&M:** The Site hazardous waste cap and groundwater monitoring network at the Site are maintained and monitored. Groundwater, surface water, and sediment sampling, as well as landfill cap maintenance continue to assure that the system is operating properly and the remedy remains operational and functional. The operation and maintenance contractor utilized in the annual sampling and reporting program at Mason County landfill was changed in 2003. Westshore Consulting has been providing the annual monitoring reports for the Site since that time.
- **Cost of System Operations/O&M:** Current annual O&M costs at the Mason County Landfill Site are primarily attributable to operation, maintenance and management of the Site landfill, and groundwater monitoring systems. 2005 Site estimated annual costs were approximately \$50,000. Other costs involve U.S. EPA and MDEQ project manager time and travel related to the Site, and unexpected Site construction or maintenance.
- **Opportunities for Optimization:** Michigan inorganic groundwater criteria such as manganese and iron continue to be exceeded in certain monitoring wells, although no groundwater plume exists. An agreement between MDEQ and Mason County was reached in August 2005 regarding the sampling of inorganic parameters. Some additional changes to the sampling program need to be discussed between Mason County and MDEQ.
- **Early Indicators of Potential Remedy Issues:** The Mason County Landfill Superfund Site has been deleted from the National Priorities List (NPL). The effective date of the completion of the NPL deletion, published in the Federal Register, was September 9, 1999.

Question B: Are the assumptions used at the time of remedy selection still valid? Yes.

- **Changes in Standards and To Be Considered:** Standards outlined in the 1988

Mason County Landfill Interim ROD, 1993 Final ROD are still valid at the Site. Standards are outlined in pages 30-33 of the 1988 Interim ROD.

- **Changes in Exposure Pathways:** No new exposure pathways have been discovered at the Mason County Landfill Site since the last five year review in 2001. MDEQ continues to be concerned regarding a potential pathway for landfill gas migration. Mason County has not previously found or reported landfill gas migration to be a concern at the Site.
- **Changes in Toxicity and Other Contaminant Characteristics:** Toxicity and other factors for contaminants of concern have not changed since the last five year review in 2001.
- **Changes in Risk Assessment Methodologies:** Risk assessment methodologies used at the Mason County Landfill Site since the last five year review in 2001 have not changed, and do not call into question the protectiveness of the remedy.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy? No.

No other information has come available that could question the remedy at Mason County Landfill. The Site remedy remains protective of human health and the environment. MDEQ is concerned about a proposed residential development northeast of the Site, and will discuss potential monitoring with Mason County.

VIII. Issues

Issues that were discovered during the five year review process and the Mason County Landfill Site inspection are noted in Table 2.

Table 2: Identified Issues

Five Year Review Issues	Affects Current Protectiveness (Y/N)	Affects Future Protectiveness (Y/N)
A sampled residential well not in document figures	N	N

Issues Noted at Site Inspection		
Excavation area caused by burrowing animal	N	N
Some monitoring wells without permanent stamp marker	N	N
MDEQ & Mason County revising monitoring program	N	N
No locks on some monitoring and stab wells	N	N

IX. Recommendations and Follow-up Actions

The following recommendations and follow-up actions address the issues which were identified during the five year review and Site inspection:

- 1) Update annual monitoring report to include additional residential well on figure.
- 2) Fill in animal excavation burrow area.
- 3) MDEQ and Mason County continue discussions to make adjustments to the current annual Site monitoring program.
- 4) Put permanent stamp markers and locks on all wells.

Table 3 : Recommendations and Follow-up Actions

New Five Year Review Issues	Recommendations Follow-up Actions	Party Responsible	Oversight Agency	Mile-stone Date	Affects Protective ness (Y/N) Current, Future
Residential well not in figures	Update O&M report figures	Mason County & contractor	EPA/MDEQ	2006	N, N
Ongoing Site Issues					
Animal burrow area	Fill in burrow area	Mason County & contractor	EPA/MDEQ	2006	N,N

Missing stamp markers	Put stamp on all wells	Mason County & contractor	EPA/MDEQ	2006	N,N
Monitoring Program	MDEQ & Mason County discuss possible changes	MDEQ & Mason County	MDEQ	Open	N, N
Missing well locks	Put locks on all monitoring and stab wells	Mason County & contractor	EPA/MDEQ	2006	N, N

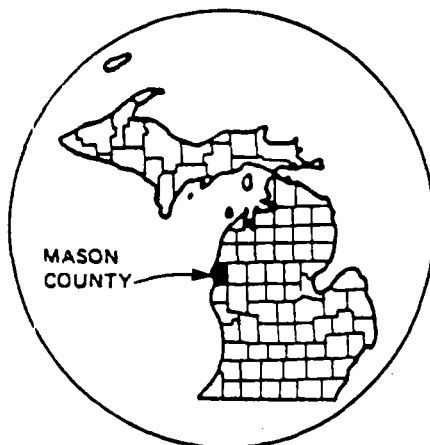
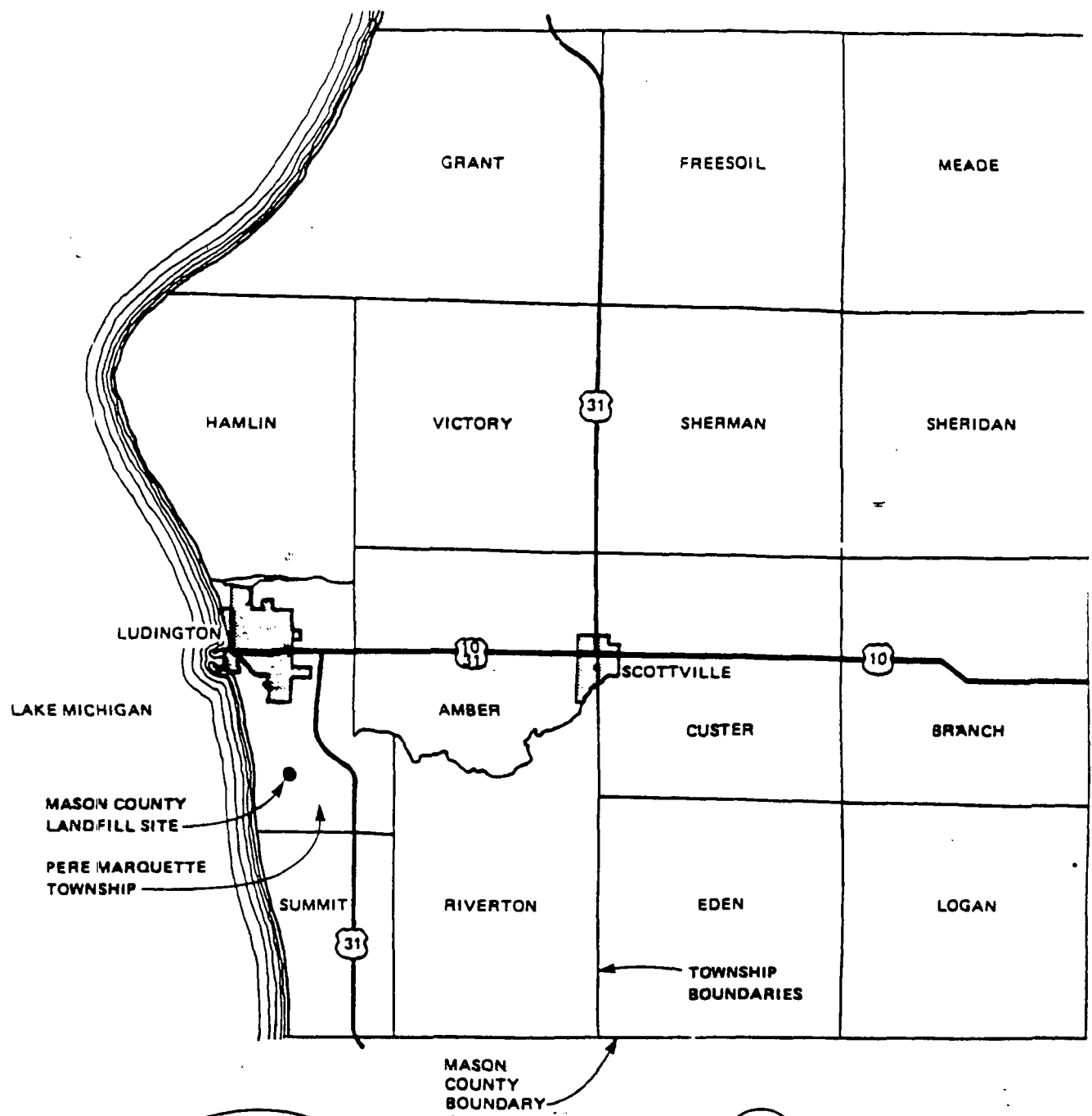
X. Protectiveness Statements

Completion of the current five year review confirms that the Mason County Landfill Superfund Site remains protective of human health and the environment, and there are no known exposure pathways that result in unacceptable health risks. The components of the remedy selected in the 1988 Mason County Landfill Site Interim ROD and 1993 Final ROD have been implemented under the 1989 Unilateral Administrative Order and 1994 Consent Decree.

The soil/clay landfill cap prevents surface water infiltration and subsequent contaminant migration off-site. Restrictions for Site access, use of the landfill, and use of Site groundwater remain in place. Closure and post closure maintenance and monitoring of the Site landfill is currently providing adequate protection of human health and the environment. Recent Site groundwater monitoring outlined in the annual sampling report dated October 2004 has shown that drinking water standards for VOCs and SVOCs are being met. The primary concern for future monitoring is to ensure Michigan drinking water criteria at all groundwater wells are met for inorganic compounds and to ensure future residential development does not lead to elevated risks from Site groundwater. MDEQ and Mason County are continuing to discuss the monitoring program and are working toward resolving these issues through modification of the Site monitoring program.

XI. Next Review

U.S. EPA performs statutory reviews on remedies selected that result in hazardous substances, pollutants or contaminants remaining at sites above levels that allow for unlimited use and unrestricted exposure. Although The Mason County Landfill Superfund Site was deleted from the NPL effective September 9, 1999, five year reviews will continue since the remedy leaves waste permanently at the Site. Therefore, another five year review will be required five year after the completion of the current five year review. The completion date of the current five year review is the signature date shown on the cover attached to the front of this report.



KEY TO COUNTIES

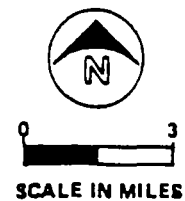
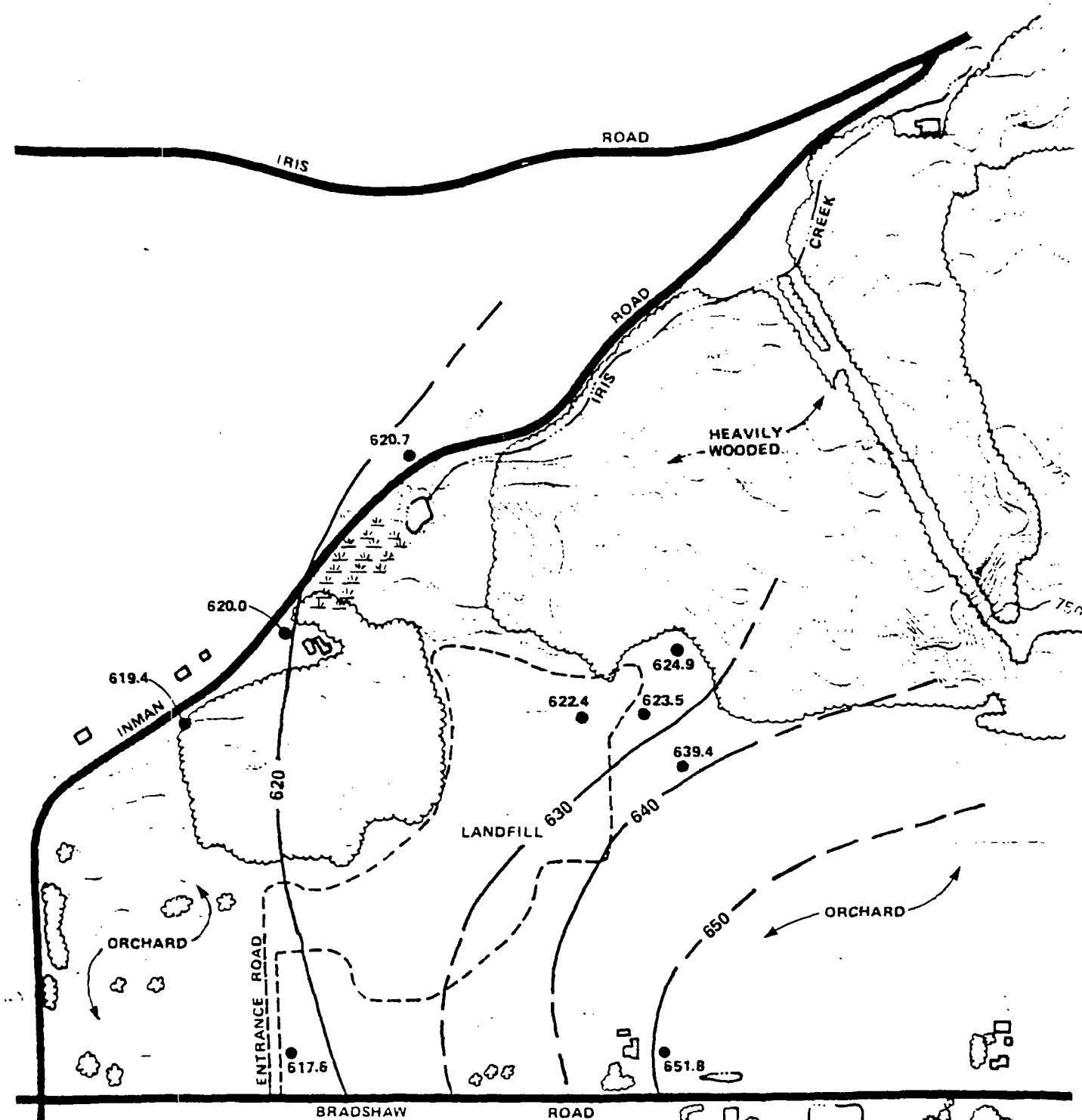


FIGURE 1
LOCATION MAP
MASON COUNTY LANDFILL RI/FS



LEGEND

— GROUND CONTOUR

● 619.4 WATER LEVEL RECORDED IN DECEMBER, 1987

— 620 — INTERPRETED GROUNDWATER CONTOUR

- - - 630 - - - INFERRED GROUNDWATER CONTOUR



0 400
SCALE IN FEET

FIGURE 2
LOWER AQUIFER
POTENTIOMETRIC SURFACE
MASON COUNTY LANDFILL RI/FS

**FIVE YEAR REVIEW REPORT
LIST OF DOCUMENTS REVIEWED
FEBRUARY, 2006**

MASON COUNTY LANDFILL SUPERFUND SITE

**LUDINGTON,
MICHIGAN**

- 1) Interim Record of Decision, Mason County Landfill Site, September 1988
- 2) Unilateral Administrative Order, Mason County Landfill Site, June 1989
- 3) Final Record of Decision , Mason County Landfill Site, September 1993
- 4) RD/RA Consent Decree, Mason County Landfill Site, October 1994
- 4) Five Year Review, Mason County Landfill Site, November 1997
- 5) Five Year Review, Mason County Landfill Site, February 2001
- 6) Mason County Landfill Site file, and operation & maintenance documents.



U.S. Environmental Protection Agency
Announces a Five-Year Review of the
Mason County Landfill Superfund Site
Pere Marquette Township, Michigan

EPA is conducting a third five-year review of the cleanup at the Mason County Landfill Superfund site. The review is required to ensure that the landfill cap continues to be maintained, the institutional controls remain in place and the selected cleanup plan continues to protect people and the environment. This review is scheduled to be completed by Feb. 27, 2006. The next five-year review will be in February 2011.

Public comment is highly encouraged. Written comments should be postmarked no later than Feb. 10, 2006, and sent to Cheryl Allen at the address below.

Site information can be found at:

Ludington Public Library
217 E. Ludington St.

Written or oral comments should be addressed to Cheryl Allen. Additional site information can be requested from these team members:

Jeff Gore
Remedial Project Manager
EPA Region 5 (SR-6J)
77 W. Jackson Blvd.
Chicago, IL 60604
(312) 886-7188
gore.jeffrey@epa.gov

Cheryl L. Allen
Community Involvement Coordinator
EPA Region 5 (P-19J)
77 W. Jackson Blvd.
Chicago, IL 60604
(312) 353-6196
allen.cheryl@epa.gov

DECLARATION OF RESTRICTIVE COVENANT

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
WASTE MANAGEMENT DIVISION
SOLID WASTE ALTERNATIVES PROGRAM

THIS INDENTURE is made the 1st day of August, 1990,

by and between County of Mason

(GRANTEE)

whose address is Courthouse, Ludington, Michigan 49431-2191,
party of the first part, and the Chief of the Waste Management Division,
Michigan Department of Natural Resources for and on behalf of the State
of Michigan whose address is Box 30241, Lansing, Michigan 48909, party of
the second part;

WITNESSETH THAT:

WHEREAS, application has been made for Landfill Closure under
provisions of the Environmental Protection Bond Implementation Act,
1988 P.A. 328, MCL 291.671 et seq, and the rules promulgated thereunder
for the purpose of closure and post closure of a disposal area upon lands
situated in the Township of Pere Marquette, County of Mason,
more particularly described as:

See Attached Exhibit 'A'

WHEREAS, Appendix A of the Solid Waste Alternatives Program grant
contract requires that at the time of closure of a landfill an instrument
which imposes a restrictive covenant upon the land involved shall be
executed by all the owners of the tract of land upon which the landfill
is located.

NOW THEREFORE, County of Mason party of
(GRANTEE)

the first part, do for themselves, their heirs, successors, lessees, or
assigns declare, covenant, and agree:

1. That the lands hereinbefore described have been used as a landfill,
and that neither they, or their servants, agents, employees, or
any of the heirs, successors, lessees, or assigns shall (or shall by
their leave or sufferance permit others to) engage in filling,
grading, excavating, drilling, or mining of the land and premises
described above until 50 years after completion of all landfill
activity upon the same, unless written authorization therefore is
obtained from the Chief of the Waste Management Division, Department

OCT 02 1990

PR 5527-2
3/90

L 415P301
4-8-1992

of Natural Resources. The State of Michigan, any municipality, or citizen may in addition to any other remedy available at law bring an action for an injunction or other process against any person, county, or municipality to restrain or prevent any violation of the restrictive covenant hereby imposed upon the subject premises.

2. That at the time of the ensealing and delivery of this instrument, the above described premises are free from all encumbrances whatever, (except)
 - a. Right of Way for Bradshaw Road.
 - b. Right of Way for Inman Road (AKA Valley Road)

The Chief of the Waste Management Division, Department of Natural Resources does for and on behalf of the State of Michigan covenant and agree to execute, acknowledge, and deliver to the party of the first part, a release of the within restrictive covenant, in suitable form, upon the expiration of the 50-year period provided for herein.

THE FOLLOWING PAGE MUST BE COMPLETED BY THE GRANTEE.

Signed in the presence of:

Jaqueline Schade
Timothy D. Hansen

County of Mason
GRANTEE

By Charles W. Eberbach

Its Chairman, Board of Commissioners

STATE OF MICHIGAN)
COUNTY OF MASON) ss

The foregoing instrument was acknowledged before me this 6th day of
August, 1990 by Charles W. Eberbach

and _____, the Chairman
and _____, of Board of Commissioners,
☒ on behalf of the County of Mason

FORM PREPARED BY:

Timothy D. Hansen - Director
(NAME)
Mason County Dept. of Public Works
401 East Ludington Avenue
(BUSINESS ADDRESS)

Ludington, Michigan 49431
(CITY, STATE, AND ZIP CODE)

Signed in the presence of:

Linda Davalos
Linda Davalos

Marcia L. Baldermann
Marcia L. Baldermann
STATE OF MICHIGAN)
COUNTY OF INGHAM) ss

Jaqueline Schade
Notary Public

Mason County, Michigan
My Commission expires 4/21/91.

Alan J. Howard
Chief of the Waste Management
Division of the Department of
Natural Resources

Alan J. Howard

The foregoing instrument was acknowledged before me this 21st day of
September, 1990 by Alan J. Howard
Chief of the Waste Management Division of the Department of Natural Resources,
on behalf of the State of Michigan.

Deanna M. Piper
Notary Public - Deanna M. Piper
Ingham County, Michigan
My Commission Expires October 6, 1990

When recorded, return to:

STATE OF MICHIGAN
Department of Natural Resources
Waste Management Division
P.O. Box 30241
Lansing, Michigan 48909

Recorded at Mason County
Register of Deeds
Liber 415 Page 301

4-8-1992

EXHIBIT 'A'

Property Description
for the
Mason County Landfill - Pere Marquette Site

Two parcels of property and plus a storm drain easement located in the Northwest Quarter and in the Northeast Quarter of Section 35, T18N, R18W, Pere Marquette Township, Mason County, Michigan being more fully described as follows:

PARCEL 'A'

Parcel 'A' consists of a 21.124 acre tract conveyed to the County of Mason by deed recorded in Liber 311 Page 1, a 2.252 acre tract conveyed to the County of Mason by deed recorded in Liber 394 Page 1123, and a 0.885 acre tract conveyed to the County of Mason by deed recorded in Liber 394 Page 1124 of the records of Mason County, Michigan being more particularly described as follows:

Commencing at the East Quarter post of said Section 35 at the intersection of Brunson and Bradshaw Roads; Thence West along the East-West Quarter line and the centerline of Bradshaw Road for a measured distance of 3,280.03 feet (previously recorded distance of 3,280.92 feet) to the point of beginning, said point being the Southwest corner of said 21.124 acre tract; Thence along said 21.124 acre tract for the following four courses:

Thence North 03 degrees 12 minutes 57 seconds West a distance of 1,103.25 feet, said point being the Southwest corner of a 2.64 acre tract belonging to Susan Dains recorded in Liber 318 Page 457;

Thence North 89 degrees 37 minutes 00 seconds East along the South line of said Susan Dains property a distance of 417.50 feet;

Thence North 03 degrees 12 minutes 57 seconds West along the East line of said Susan Dains property a distance of 208.75 feet, said point being on the South line of lands belonging to the County of Mason recorded in Liber 295 Page 335 and the North Eighth line;

Thence North 89 degrees 37 minutes 00 seconds East along the South line of said County of Mason property and the North Eighth line a distance of 300.65 feet to the Southwest corner of said 2.252 acre tract and the Southeast corner of said County of Mason lands;

Thence along said 2.252 acre tract for the following three courses:

Thence North 00 degrees 10 minutes 15 seconds West along the East line of said County of Mason lands a distance of 150.00 feet to a point being the corner of lands belonging to Helen Cluchey recorded in Liber 219 Page 70;

Thence North 89 degrees 54 minutes 01 seconds East along the South line of said Helen Cluchey property a distance of 652.44 feet;

Thence South 01 degrees 22 minutes 00 seconds East along said Helen Cluchey property a distance of 150.04 feet to the North Eighth line and a corner of the Edward Sr. and Marion L. Dains property recorded in Liber 191 Page 154, said point being the Northeast corner of said 21.124 acre tract;

Thence along the Edward Sr. and Marion L. Dains property for the following eleven courses:

Thence South 01 degrees 22 minutes 00 seconds East a distance of 240.00 feet;

Thence South 86 degrees 38 minutes 00 seconds West a distance of 264.00 feet;

Thence South 50 degrees 38 minutes 00 seconds West a distance of 27.46 feet to the Northeast corner of said 0.885 acre tract;

Thence South 00 degrees 38 minutes 00 seconds West along the East line of said 0.885 acre tract a distance of 427.41 feet to the Southeast corner thereof;

Thence North 89 degrees 22 minutes 00 seconds West for a distance of 267.00 feet passing the Southwest corner of said 0.885 acre tract at 100.00 feet;

Thence South 26 degrees 08 minutes 00 seconds West a distance of 277.00 feet;

Thence 60 degrees 02 minutes 00 seconds West a distance of 247.50 feet;

Thence North 89 degrees 58 minutes 00 seconds West a distance of 216.00 feet;

Thence North 03 degrees 58 minutes 00 seconds West for a distance of 105.00 feet;

Thence North 87 degrees 58 minutes 00 seconds West a distance of 188.90 feet;

Thence South 03 degrees 12 minutes 57 seconds East for a distance of 358.43 feet to a point on the East-West Quarter line of Section 35 and the centerline of Bradshaw Road;

Thence due West along the East-West Quarterline and said centerline of Bradshaw Road a distance of 21.00 feet to the point of beginning.

The foregoing tract described as Parcel 'A' contains 24.261 acres and is subject to any easements or restrictions of record.

Parcel 'B'

Parcel 'B' consists of a tract of land conveyed to the County of Mason by deed recorded in Liber 295 Page 335 of Mason County Records which is a part of the Northeast Quarter of the Northwest Quarter of Section 35, T18N, R18W, Pere Marquette Township, Mason County, Michigan, lying South and East of the public highway, commonly known as Inman (Valley) Road, being more particularly described as follows:

Commencing at the North Quarter corner of Section 35, T18N, R18W, thence South 00 degrees 47 minutes East along the North-South Quarter line a distance of 796.99 feet to a point on the centerline of said Inman Road which is hereafter known as the point of beginning;

Thence South 00 degrees 47 minutes East along said North-South Quarter line a distance of 515.05 feet to a point on the North Eighth line;

Thence North 89 degrees 25 minutes West along said North Eighth line a distance of 405.19 feet;

Thence North 00 degrees 35 minutes East a distance of 50.00 feet;

Thence North 89 degrees 25 minutes West a distance of 191.23 feet to a point on the centerline of said Inman Road;

Thence North 40 degrees 50 minutes East along the centerline of said Inman Road a distance of 295.24 feet;

Thence North 49 degrees 52 minutes East along the centerline of said Inman Road a distance of 266.05 feet;

Thence North 71 degrees 40 minutes East along the centerline of said Inman Road a distance of 202.27 feet to the point of beginning.

The foregoing described Parcel 'B' is subject to the right of way for the county highway (Inman Road) along the entire Northerly side.

Parcel 'C' (Storm Drain Easement)

Parcel 'C' consists of a storm drain easement recorded in Liber 394 Page 1039 of Mason County records fifty (50) feet in width, being twenty-five (25) feet each side and parallel to the following described centerline, situated in the Northeast Quarter of the Northwest Quarter and in the Southeast Quarter of the Northwest Quarter of Section 35 T18N, R18W, Pere Marquette Township, Mason County, Michigan, being over and across lands belonging to Susan Dains, recorded as a 2.64 acre tract in Liber 318 Page 457 of the records of Mason County, Michigan:

Beginning at a point on the North line of Susan Dains lands, said point being North 89 degrees 37 minutes 00 seconds East a distance of 162.23 feet from the Northwest corner of said Susan Dains lands and the centerline of Inman (Valley) Road;

Thence South 21 degrees 30 minutes 48 seconds East a distance of 212.30 feet to an Angle Point;

Thence South 02 degrees 37 minutes 35 seconds West a distance of 60.98 feet to the terminus of said easement on the South line of said Susan Dains lands, said point being South 89 degrees 37 minutes 00 seconds West a distance of 70.54 feet from the Southeast corner of said Susan Dains lands.

KNOW ALL MEN BY THESE PRESENTS, That JOHN W. BABBIN, a married man,
whose street number and postoffice address is 2168 Inman Road, Ludington, MI 49431

Convey and Warrant to THE COUNTY OF MASON

whose street number and postoffice address is County Building, Ludington, Michigan 49431

the following described premises situated in the Township of Pere Marquette County of Mason
and State of Michigan, to-wit:

A parcel of land being a part of the NE 1/4 of the NW 1/4 of Section
35, T18N, R18W, lying South and East of the public highway, commonly
known as the Valley Road, which is described as follows:

Commencing at the North quarter corner of Section 35, T18N, R18W, thence
South 0°47' East along the North-South quarter line a distance of 796.99
feet to a point on the centerline of said Valley Road, which is here-
after known as the point of beginning, thence South 0°47' East along
said North-South quarter line a distance of 515.05 feet to a point on
the North eighth line, thence North 89°25' West along said North eighth
line a distance of 405.19 feet, thence North 0°35' East a distance of
50.00 feet, thence North 89°25' West a distance of 191.23 feet to a
point on the centerline of said Valley Road, thence North 40°50' East
along the centerline of said Valley Road a distance of 295.24 feet,
thence North 49°52' East along the centerline of said Valley Road a
distance of 266.05 feet, thence North 71°40' East along the centerline
of said Valley Road a distance of 202.27 feet to the point of beginning,
according to the Government Survey thereof, SUBJECT TO the right-of-way
of the County Highway along the entire Northerly side.

for the sum of SIXTY THOUSAND (\$60,000.00) DOLLARS.

subject to Encumbrances of record

Dated this 13th day of October 19 82

Signed and Sealed in presence of

James J. Kobza
JAMES J. KOBZA
Susan L. Bach
SUSAN L. BACH

STATE OF MICHIGAN
COUNTY OF MUSKEGON

STATE OF MICHIGAN
MASON COUNTY

Received for record this 14th day
of October A.D. 1982 at 11:55 o'clock
A.M. and recorded in Liber 295
of Records on page 335

Mary Edmini Kolaski
Register of Deeds

Signed and Sealed:

John W. Babbini (S.S.)
JOHN W. BABBIN (S.S.)
(S.S.)
(S.S.)

The foregoing instrument was acknowledged before me this 13th day of October 19 82
by JOHN W. BABBIN

Susan L. Bach
SUSAN L. BACH

My Commission expires 3/7 1983 Notary Public, Muskegon County, Michigan

*Note: (1) insert date (2) insert name of person(s) acknowledged (grantor) (3) signature of person taking acknowledgment

Mason County Treasurer
I hereby certify that the taxes have been paid for the five years preceding
the date of said instrument, and that there are no Tax Liens or Titles held
by the State for a period of five years preceding the date of said instrument.

Mason County Treasurer

- Please note the following:
1. Marital status of each party who signs this instrument shall be properly indicated. Typewritten or stamped words such as "husband" or "wife" are not sufficient.
 2. If the instrument is performed outside the State of Michigan, the acknowledgment must show the date of the person taking the acknowledgment. The official seal of the person performing the instrument outside the State of Michigan should be attached to the deed.

Drafted by JAMES J. KOBZA
Business address: 503 Muskegon Fed'l. Svgs. Bldg.
Muskegon, MI 49440

After recording return to GRANTEE

COPY

E
T
P
C

COPY

WARRANTY DEED

Statutory Form

Received for record

at 9 o'clock

Feb. 1

19 84

A. M., and recorded in

Book 311 page 1

Mary Golden Kolaski

Register of Deeds

Mason

County, Michigan

THIS INDENTURE, Made this 22nd day of January 1984
WITNESSETH, That EDWARD DAINS and MARION L. DAINS, husband and wife,
said Edward Dains being survivor of a tenancy by the entireties
with Mable Dains, whose death certificate is recorded in Liber
19, Page 18, Mason County Records, of 5792 Bradshaw Road,
Ludington, Michigan, 49431,

*Who is also known as Christine Mable Dains

for the sum of Thirty thousand & no/100 (\$30,000.00) Dollars
CONVEY AND WARRANT to THE COUNTY OF MASON, a Municipal
corporation, of Mason County Courthouse, Ludington, Michigan, 49431,

the following described lands and premises situated in the Township of Pere Marquette
County of Mason and State of Michigan, viz:

A part of the Northwest Quarter (NW 1/4) and the Northeast Quarter
(NE 1/4) of Section Thirty-five (35), Township Eighteen (18) North,
Range Eighteen (18) West, described as follows: Commencing at the
E 1/4 post of Section 35, Township 18 North, Range 18 West; thence
West along the E & W 1/4 line of Section 35, 3280.92 feet to the
point of beginning; thence N 03°12'57" W 1103.25 feet; thence
N 89°37'00" E 417.50 feet; thence N 03°12'57" W 208.75 feet;
thence N 89°37'00" E 300.65 feet to a point on the North and South
1/4 line of Section 35 at the North 1/16 post; thence N 89°54'01" E
655.58 feet along the North 1/16 line of Section 35; thence
S 01°22'00" E 240.00 feet; thence S 86°38'00" W 264.00 feet; thence
S 50°38'00" W 158.00 feet; thence S 0°38'00" W 343.50 feet; thence
N 89°22'00" W 167.00 feet; thence S 26°08'00" W 277.00 feet; thence
S 60°02'00" W 247.50 feet; thence N 89°58'00" W 216.00 feet; thence
N 03°58'00" W 105.00 feet; thence N 87°58'00" W 188.90 feet; thence
S 03°12'57" E 358.43 feet to the East and West 1/4 line of Section
35; thence West 21.00 feet to the point of beginning, Mason County,
Michigan.

Subject to the terms of all instruments thereto of record.

Signed in presence of

James J. Kobza
JAMES J. KOBZA
Susan L. Kobza
SUSAN L. KOBZA

Signed on the date first above written

Edward Dains
Edward Dains

Marion L. Dains
Marion L. Dains
Mason County Treasurer

STATE OF MICHIGAN,

COUNTY OF MASON MUSKEGON

On this 22nd day of January

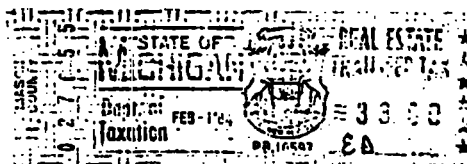
1984

County personally appeared Edward Dains and Marion L. Dains

I hereby certify that the taxes have been paid for the five years preceding
the date of said instrument, and that there are no Tax Liens or Titles held
by the State for a period of five years prior to the date of said instrument.
S. S.

Walter J. Johnson, Dep.
Before me, a Notary Public, in and for said
Mason County Treasurer

to me known to be the same person s described in and who executed the within instrument, who
acknowledged the same to be their free act and deed.



Susan L. Kobza
SUSAN L. KOBZA
Muskegon
Notary Public,
My Commission Expires: 2/25/87
County, Michigan

EASEMENT FOR STORM DRAIN

EM
In consideration of the payment of Three Hundred (\$300.00) Dollars, payment of which is hereby acknowledged Susan Dains of 2208 S. Inman Road, Ludington, Michigan 49431 grants and easement and right of way to the County of Mason, a Michigan Municipal Corporation of Mason County Courthouse, Ludington, Michigan 49431 for the purpose of installing, maintaining, repairing, or replacing a storm drain over and across the property described in a deed recorded in Liber 318 at page 457.

The easement shall be a fifty foot strip in width being being twenty five feet each side and parallel to the following described centerline:

Situate in the Northeast Quarter of the Northwest Quarter and in the Southeast Quarter of the North West Quarter of Section 35, Town 18 North, Range 18 West, Pere Marquette Township, Mason County, Michigan being over and across lands belonging to Susan Dains, recorded as a 2.64 acre tract in Liber 318 at page 457 of the records of Mason County, Michigan.

Beginning at a point on the North line of Susan Dains lands said point bearing North 89 degrees 37'00" East a distance of One Hundred Sixty Two and twenty three one hundredths (162.23) feet from the Northwest corner of said Susan Dains lands and the centerline of Inman Road (Valley Road).

Thence South 21 degrees 30'48" East for a distance of Two Hundred Twelve and Thirty One-hundredths (212.30) feet to an Angle Point;

Thence South 02 degrees 37'35" West for a distance of Sixty and Ninety Eight One-hundredths (60.98) feet to the terminus of said easement on the South line of said Susan Dains lands, said point bearing South 89 degrees 37'00" West, a distance of Seventy and Fifty-four One-hundredths (70.54) feet from the Southeast corner of Susan Dains lands.

Grantee may enter upon adjacent property for the purpose of installing, repairing or replacing such storm sewer, but shall do so in such a way as to minimize any damage or interference with the use of the property by Grantor or Grantor's successors. Grantee shall restore the surface to as good or better than its original condition.

After the installation, maintenance or replacement of the drain Grantee agrees to restore the surface to as good or better than the original condition of said premises, and to install the manhole at the angle point flush to the surface. Grantee further agrees to restore the surface of Grantor's property in the event that any erosion is caused upon Grantor's property by reason of the construction, maintenance or replacement of the drain or the activities by the Grantee on neighboring property in constructing or maintaining the cap on the landfill. Grantee agrees to keep the drain in good repair and in good operating condition.

Grantee may move any materials stored on the easement which interfere with the construction, maintenance, repair or replacement of the storm sewer.

Grantor shall not make any use of the easement which would interfere with the installation, maintenance, repair or replacement of the storm sewer, and shall not construct any permanent structures upon such easement.

Grantors warrant that they have good title to the above described property and authority to grant this easement.

This easement shall be a perpetual easement granted to the County of Mason and unto its successors and assigns.

This Easement is executed this 23rd day of JULY, 1990.

WITNESSES:

Timothy D. Hansen
Timothy D. Hansen

Susan Dains
Susan Dains

David A. Hasenbank
David A. Hasenbank

STATE OF MICHIGAN)
) ss
County of Mason)

On this 23rd day of July, 1990, before me, a Notary Public in and for said County personally appeared Susan Dains, to me known to be the same person who executed the within instrument and who acknowledged same to be her free act and deed.

Jacqueline Schade
Jacqueline Schade, Notary Public
Mason County, Michigan
My commission expires: 4-21-71

PREPARED BY:
Roger H. Anderson P-24465
405 E. Ludington Avenue
P.O. Box 990
Ludington, Michigan 49431
(616) 843-2548

COPY

43-010-035-001-00

394 PAGE 1123

July 27 1990
394
Notary Public
Mason County, Michigan

This Conveyance, Made this 10th day of June 1990

WITNESSETH: That HELEN CLUCHEY of 87 N. Hancock, Pentwater, Michigan 49449

for the sum of One Dollar and other valuable considerations Three Thousand Three Hundred Seventy Five and no/100 (\$3,375.00) CONVEY AND WARRANT unto Dollars

COUNTY OF MASON, a Michigan Municipal Corporation, Courthouse, Ludington, Michigan 49431
the following described real estate situated in the Township of Pere Marquette of Mason County, Michigan, to-wit:

Part of the NE 1/4 Section 35, T18N, R18W, Mason County, Michigan described as commencing at the E 1/4 corner of said section 35, thence West along the East and West 1/4 line 1,948.52 feet, thence N 01 degrees 22'00" W 1,316.15 to the N 1/8 line for the point of beginning, thence S 89 degrees 54'10" W 655.08 feet to the North and South 1/4 line, thence N 00 degrees 10'15" W along North and South 1/4 line 150.00 feet, thence N 89 degrees 54'01" E 652.44 feet, thence S 01 degrees 22'00" E 150.04 feet to the point of beginning.

Subject to rights of way granted to Dow Chemical Company of record.

MASON COUNTY
REAL ESTATE
TRANSFER TAX
\$3.85
Date of Recording
1990
Notary Public

Signed in Presence of

Helen Cluchey L.S.

Timothy P. Hansen L.S.

Earl A. Conklin L.S.

L.S.

STATE OF MICHIGAN)
COUNTY OF MASON) ss.
Helen Cluchey

On this 10th day of June 1990, before me,
a Notary Public in and for said County, personally appeared

to me known to be the same person described in and who executed the within instrument and who acknowledged the same to be her free act and deed.

Jacqueline Schade
Mason
County, Michigan
Notary Public

My Commission Expires: April 21, 1991.

DRAFTED BY Roger H. Anderson
SAVIGAN, ANDERSON & ANDREWS
ATTORNEYS AT LAW
405 EAST LUDINGTON AVENUE
P.O. BOX 980
LUDINGTON, MICHIGAN 49431
(616) 843-2548

I hereby certify that the taxes have been paid for the five years preceding the date of said instrument, and that there are no Tax Liens or Taxes held by the State for a period of five years prior to the date of said instrument.
This certification does not include current taxes now being collected.

Bernell Burke Date 7-26-90
Mason County Treasurer Ludington, MI

COPY

Pl 53-010-035-005-00

This Conveyance, Made this 10TH day of JULY 1990

WITNESSETH: That EDWARD DAINS and MARION L. DAINS, husband and wife of 5792 Bradshaw, Ludington, Michigan 49431

for the sum of One Dollar and other valuable considerations Three Thousand (\$3,000.00) CONVEY AND WARRANT unto Dollars

COUNTY OF MASON, a Michigan Municipal Corporation of Mason County Courthouse, Ludington, Michigan 49431

the following described real estate situated in the Township of Pere Marquette of Mason County, Michigan, to-wit:

Part of the NE 1/4, Section 35, T18N, R18W, Mason County, Michigan, described as commencing at the E 1/4 corner of said Section 35, thence West along the East and West 1/4 line 2,356.87 feet, thence N 00 degrees 38'00" E 616.78 feet to the point of beginning, thence S 89 degrees 22'00" E 100.00 feet, thence N 00 degrees 38'00" E 427.41 feet, thence S 50 degrees 38'00" W 130.54 feet, thence S 00 degrees 38'00" W 343.50 feet to the point of beginning. CONTAINING 0.885 ACRES M/L.

Edward Dains is a survivor of a tenancy by the entireties with Mable Dains a/k/a Christine Mable Dains, whose death certificate is recorded in Liber 394 at page 44.



Signed in Presence of

Timothy D. Hansen
Earl A. Conklin

Edward Dains L.S.
Marion L. Dains L.S.

STATE OF MICHIGAN)
COUNTY OF MASON) ss.

On this 10th day of July 1990, before me,
a Notary Public in and for said County, personally appeared

Edward Dains and Marion L. Dains

to me known to be the same persons described in and who executed the within instrument and who acknowledged the same to be their free act and deed.

I hereby certify that the taxes have been paid for the five years preceding the date of said instrument, and that there are no Tax Liens or Titles held by the State for a period of five years prior to the date of said instrument.

This certification does not include current taxes now being collected)

James A. Burke Date 7-26 1990
Mason County Treasurer, Ludington, MI

Jacqueline Schade
Notary Public
Mason County, Michigan

My Commission Expires: April 21, 1991

DRAFTED BY: Roger H. Anderson
GAVIGAN, ANDERSON & ANDREWS
ATTORNEYS AT LAW
405 EAST LUDINGTON AVENUE
P.O. BOX 990
LUDINGTON, MICHIGAN 49431
(810) 843-2548